

*Application Serial No. 10/590,383
Response to Office Action of July 14, 2008*

REMARKS

The amendment at the end of claim 24 is supported at page 16, lines 17- 30: "The expansion stroke corresponds to BC on the PV diagram ...[at point C in Fig. 3] the discharge hole 2b is provided with the differential pressure regulating valve 21, and the pressure Pd in the working chamber 12 is lower than the pressure Pl in the discharge space 20. Therefore, the differential pressure regulating valve 21 is closed."

In response to the outstanding Office Action:

(1) The Examiner required a new title. The title is amended as suggested.

(2-3) Claims 24-26 and 28-39 are rejected under 35 U.S.C. §103(a) as being obvious over Hattori et al., US 5,775,883 in view of Hasegawa et al., WO 03/089766 (corresponding to US 2005/0158199). This rejection is respectfully traversed.

The sole independent claim, claim 24, is rejected over Hattori, which is applied for every feature except the last-recited feature, namely, the differential pressure regulating valve which is operated by a pressure difference between the working chamber and the discharge space. The Examiner relies on Hasegawa's valve 30a/30b of Fig. 1 for disclosing this feature, and asserts that it would have been obvious to combine the references.

(a) Hasegawa teaches against one of the features now added to claim 24, a single discharge, unless the number of vanes is four.

Hasegawa discloses in paragraph 0014 that "when the number of the vanes is n, the firstly communicating discharge port is formed in the cylinder at a position of approximately $\{180 \times (1+1/n)\}$ degrees from the small clearance in a direction where the shaft rotates, and the succeeding communicating discharge port is formed in the cylinder at any position in an area from an angle of approximate $\{180 \times (1+1/n)\}$ degrees to an angle of 360 degrees from the small clearance in the direction where the shaft rotates." In the case of only one vane (as in Hattori), this implies that the discharge port should be located 360 degrees from the small clearance, that

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is, exactly *at* the small clearance, which is a point where no fluid can be transferred. Thus, Hasegawa inherently teaches against a single-vane embodiment, because in this case its invention would be impossible to use.

Therefore, Hasegawa actively teaches against claim 24, which recites two working chambers (e.g., one vane) and a single discharge. The Examiner is referring to, e.g., the Abstract of Hasegawa. Because of this active teaching, the present claims are not predictable from Hasegawa, and therefore are not obvious.

(b) Neither reference discloses the feature now added in the new final paragraph of claim 24. Therefore, even if combined (not admitted), the claims would not be reached. Hasegawa's formula, $\{180 \times (1+1/n)\}$ degrees, is not what the Applicants claim. Being mathematical, it allows no variation and therefore no variation could be obvious.

(c) With respect, the references should not be combined.

Hattori discloses an eccentric roller with one fixed vane, while Hasegawa discloses a centered rotating member with multiple rotating vanes 24. Hattori, although it has a mechanism different from that of Hasegawa, could best corresponds to the one-vane embodiment of Hasegawa, because Hattori has only one vane. Therefore, Hasegawa would not be combined with Hattori.

Hattori already employs a spring-loaded valve, namely shutoff valve 117 of Fig. 29, but it is used in a manner completely different from that of the valve 30a/30b of Hasegawa. Hattori in column 9 describes that the spring of valve 117 is heat-responsive bi-metal, and this valve is also under control of a remote mechanism. Thus, Hattori teaches that a spring-loaded valve is used differently from what Hasegawa discloses. Hattori was aware of such valves but chose not to use it as Hasegawa discloses; it used such a valve elsewhere.

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(4) Claim 27 is rejected under 35 U.S.C. §103(a) as being obvious over Hattori in view of Hasegawa and Kuono et al., US 2002/0012595. This rejection is traversed, *inter alia*, on the basis of the arguments above.

In view of the aforementioned amendments and accompanying remarks, the application is submitted to be in condition for allowance, which action, at an early date, is requested.

Respectfully submitted,

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